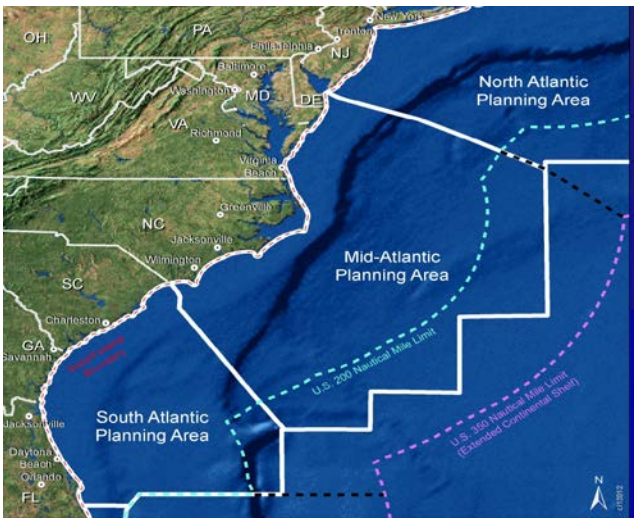
BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT
FACT SHEET

Atlantic Geophysical and Geological Surveys

Programmatic Environmental Impact Statement

BOEM, in cooperation with NOAA's National Marine Fisheries Service (NOAA Fisheries), and pursuant to the National Environmental Policy Act (NEPA), has developed a Programmatic Environmental Impact Statement (PEIS) to evaluate potential environmental effects of proposed geological and geophysical (G&G) survey activities on the Mid- and South Atlantic Outer Continental Shelf (OCS).



G&G surveys use sound waves sent through the ocean floor to map the subsurface. G&G surveys are conducted to: (1) obtain data for hydrocarbon exploration and production; (2) aid in siting renewable energy structures by characterizing the ocean floor; (3) locate potential sand and gravel resources; (4) identify possible seafloor or shallow depth geologic hazards; and (5) locate potential archaeological resources and potential hard bottom habitats that should be avoided.

Background

From 1966-1988, 2-dimensional (2D) seismic data were acquired in all areas of the Atlantic OCS. This G&G data, acquired over 30 years ago, has been eclipsed by more advanced instrumentation and technology. Newer surveys are needed to make informed decisions regarding whether and where to offer oil and gas leases, engineering decisions regarding the construction of renewable energy projects, and to inform estimates regarding the composition and volume of sand and gravel resources for coastal restoration projects. This information would also be used to ensure the proper use and conservation of OCS energy resources and the receipt of fair market value for any leasing of public lands. Modern 2D and 3D data sets can now be acquired using better acoustic sourcing and longer receiver cables to help define a better stratigraphic framework in areas that may comprise petroleum system elements. These newer data would not just be used by industry for more efficient exploration and development of oil and gas, but also by BOEM to improve national hydrocarbon resource estimates and for other regulatory responsibilities.

Since 1998, BOEM has partnered with academia and other experts to invest more than $50 million on protected species and noise-related research. The bureau has provided critical studies on marine mammals, such as the sperm whale and seismic impacts, and conducted numerous expert stakeholder workshops to discuss and identify further information needs on acoustic impacts.

Purpose of the PEIS

The PEIS describes and evaluates the potential environmental impacts of G&G survey activities in Federal waters of the Mid- and South Atlantic OCS and adjacent State waters. It examines G&G survey activities for three

program areas (oil and gas, renewable energy, and marine minerals) for possible activity levels projected between 2012 and 2020. The PEIS also identifies mitigation and monitoring measures to avoid, reduce, or minimize impacts. The goal is to provide factual, reliable, and clear analysis about potential environmental effects of the proposed activities and alternatives. The PEIS also establishes a framework for future NEPA evaluations of site-specific actions, where any new information since publication of the final PEIS will be analyzed and any site-specific mitigation can be applied. BOEM prepared the PEIS for four primary reasons, including:

(1) Congress directed development of the PEIS through the Conference Report for Department of the Interior, Environment, and Related Agencies Act, 2010;
(2) There was previously no programmatic NEPA coverage for G&G activities in Atlantic OCS waters;
(3) BOEM will need similar analyses to comply with various other environmental laws (e.g., a Biological Assessment for consultation under section 7 of the Endangered Species Act, applications for permitting under the Marine Mammal Protection Act, and an Essential Fish Habitat Assessment under the Magnuson-Stevens Fishery Conservation and Management Act);
(4) BOEM has received several permit requests for seismic air gun surveys in support of oil and gas exploration in these areas, as well as anticipated activity from marine minerals mining; and
(5) High resolution geophysical surveys and sub-bottom sampling will be necessary to locate shallow hazards, cultural resources, and hard-bottom areas; evaluate installation feasibility; assist in the selection of appropriate foundation system designs; and determine the variability of subsurface sediments for renewable energy facilities.

Potential Impacts Identified

Some marine species rely on sound to communicate and gain information about their environment critical to survival and reproductive success. Human-made sound can affect certain species of marine life in a variety of ways, from minor behavioral modifications to major physiological impacts such as permanent or temporary hearing loss. The potential for impacts is largely tied to the reaction of the individual animal (age, hearing range, prior exposure to sound source), physical environmental factors, and the mitigations put in place to minimize or eliminate the potential for impacts.

The PEIS considers potential impacts on 13 different types of resources (e.g., marine mammals, fish, benthic communities, and cultural resources), as well as cumulative effects from G&G and other human activities in these areas. The PEIS also considers the potential effects from 11 different 'impact producing factors' on these resources. Of these factors, sound from geophysical survey sources presents the highest potential for impacts.

Mitigation

BOEM has worked with NOAA Fisheries and several other agencies to develop a mitigation strategy focused on: (1) avoiding injury from exposure of air gun sound sources to marine animals in close proximity to the source; and (2) reducing the potential for behavioral disruption. The mitigation measures analyzed in the PEIS include limitations on air gun surveys in right whale critical habitat and their migratory corridors during certain times of the year; seismic air gun, electromechanical and borehole operational protocols; vessel speed restrictions and marine trash and debris awareness briefings. Monitoring and reporting requirements are also analyzed. These mitigations and monitoring requirements are covered in detail in the PEIS.

The preferred alternative identified in the PEIS identifies the most aggressive mitigation measures and the strictest safeguards to reduce or eliminate impacts to marine life. Additional mitigation efforts include requirements to avoid vessel strikes, special closure areas to protect the main migratory route for the highly endangered North Atlantic Right Whale, geographic separation of simultaneous seismic airgun surveys, and Passive Acoustic Monitoring (PAM) to supplement visual observers and improve detection of marine mammals prior to and during seismic airgun surveys.

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